

WHAT IS CLAIMED IS:

1. A motion control method of a vehicle provided with a transfer ratio variable mechanism for changing a transfer ratio by driving a motor, and an assist motor assisting a steering force on the basis of a steering torque, in the middle of a steering transfer system connecting a steering wheel and steered wheels, wherein a steering wheel torque generated in accordance with an operation of said steering wheel is determined by using a steering torque generated by an output shaft of said transfer ratio variable mechanism, a motor torque generated by a motor of said transfer ratio variable mechanism and a rotation angle of said motor, on the basis of a dynamic equation expressing a torque transfer by said transfer ratio variable mechanism, and said assist motor is controlled by setting the determined steering wheel torque to said steering torque.

2. A motion control method of a vehicle as claimed in claim 1, wherein said steering wheel torque is determined by using at least one term of an inertia term by said transfer ratio variable mechanism and a Coulomb friction term by said transfer ratio variable mechanism, in configuration terms of the dynamic equation expressing the torque transfer by said transfer ratio variable mechanism.

3. A motion control apparatus of a vehicle provided with a transfer ratio variable mechanism for changing a transfer ratio by driving a motor, and an assist motor assisting a steering force on the basis of a steering torque, in the middle of a steering transfer system connecting a steering wheel and steered wheels, wherein the motion control apparatus is provided with a steering wheel torque calculating means for determining a steering wheel torque generated in accordance with an operation of said steering wheel by using a steering torque generated by an output shaft of said transfer ratio variable mechanism, a motor torque generated by a motor of said transfer ratio variable mechanism and a rotation angle of said motor, on the basis of a dynamic equation expressing a torque transfer by said transfer ratio variable mechanism, and said assist motor is controlled by setting the determined steering wheel torque determined by said steering wheel torque calculating means to said steering torque.

4. A motion control apparatus of a vehicle as claimed in claim 3, wherein said steering wheel torque calculating means determines said steering wheel torque by using at least one term of an inertia term of said transfer ratio variable mechanism and a Coulomb friction term of said transfer ratio variable mechanism, in configuration terms of the dynamic equation expressing the torque transfer by said transfer ratio variable mechanism.